



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,309	03/16/2004	William E. Italia	GP-304136 (2760/144)	1978

7590 11/09/2005

General Motors Corporation
Legal Staff, Mail Code 482-C23-B21
300 Renaissance Center
P.O. Box 300
Detroit, MI 48265-3000

EXAMINER

HOLLIDAY, JAIME MICHELE

ART UNIT	PAPER NUMBER
----------	--------------

2686

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,309

Applicant(s)

ITALIA ET AL.

Examiner

Jaime M. Holliday

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claim 15** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. **Claim 15** recites the limitation "the apparatus of claim 16" in **line 1**. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-5 and 7-20** are rejected under 35 U.S.C. 102(e) as being anticipated by **Howe (U.S. Patent # 6,615,381 B1)**.

Consider **claim 1**, Howe clearly shows and discloses a system for optimizing the routing of a call originated from a land-based terminal **43** to a wireless mobile terminal **47**, reading on the claimed "wireless mobile communication device," utilizing the interaction between a server controlled Internet protocol network and the home location register (HLR) **53** of the mobile terminal. In response to a call request by the server, the HLR identifies the visited location register (VLR) **57** in contact with the mobile terminal and obtains a temporary local directory number (TLDN) of the local serving switch in contact with a mobile data unit connected to the mobile terminal. The server uses the TLDN to reach a data unit on the network, which is used to place a local call over the public switched telephone network (PSTN) to the serving switch, reading on the claimed, "method for assigning a mobile dialing number (MDN) to a wireless mobile communication device (MCD) for providing local call access to the MCD from a base address for the MCD," (abstract), the method comprising:

searching the internal database of the HLR to determine the VLR last in contact with the mobile terminal, reading on the claimed "selecting a wireless rate center encompassing the base address and having an MDN providing local call access to the MCD from the base address for the MCD," (column 3 lines 37-39); and

sending a routing request from the HLR to the VLR, and the VLR determining that a call is deliverable and allocating a TLDN from a pool of numbers whose geographic base is the serving switch **63** in communication with

the mobile terminal, reading on the claimed "assigning the MDN providing local calling access to the MCD from the base address for the MCD, in the selected wireless rate center encompassing the base address, to the MCD," (column 4 lines 28-33).

Consider **claim 2**, and **as applied to claim 1 above**, Howe further discloses the home mobile switch **19** passes the TLDN on to a second public switch telephone network/inter-exchange carrier switches (PSTN/IXC) **37** for delivery to the serving switch associated with the VLR where the mobile unit is located. The VLR associates the TLDN allocated with the mobile data unit and passes the information back to the serving switch, reading on the claimed "activating the assigned MDN," (column 3 lines 9-15).

Consider **claim 3**, and **as applied to claim 2 above**, Howe further discloses the TLDN is returned to the HLR in to response to the routing request, then is forwarded to the network server as a response to a location request for the mobile terminal, reading on the claimed "configuring the MCD for operation with the assigned MDN," (column 4 lines 32-35).

Consider **claim 4**, and **as applied to claim 1 above**, Howe further discloses the HLR searches its internal database for the VLR in contact with the mobile terminal, which then identifies the switch in communication with the mobile terminal that will connect the incoming call to the data unit associated with the mobile terminal, reading on the claimed "compiling a database defining geographic boundaries of a plurality of wireless rate centers", and selecting the

wireless rate center of claim 1 from the database,” (column 3 lines 37-39, column 4 lines 29-33, 65-67). The VLR, reading on the claimed “wireless rate center,” stored in the database determines the serving switch which is the geographic location of the mobile terminal.

Consider **claim 5**, and **as applied to claim 4 above**, Howe further discloses that the network server chooses an appropriate data unit **70** from the pool that is local to the physical location of the mobile terminal, by using the NPA-NXX number format of the TLDN and comparing it with the phone number connection between the data unit and its connection to the PSTN/IXC, reading on the claimed “converting the base address to a geographic location and selecting the wireless rate center from those wireless rate centers in the database having geographic boundaries encompassing the geographic location of the base address,” (column 4 lines 52-57).

Consider **claim 7**, and **as applied to claim 1 above**, Howe further discloses the HLR searches its internal database to determine the VLR last in contact with the mobile terminal, reading on the claimed “selecting the wireless rate center prior to contacting a wireless service provider,” (column 3 lines 37-39). The HLR contacts the VLR and asks for the identity of the serving switch last in contact with the mobile terminal, reading on the claimed “transmitting a designation of the selected wireless rate center to a wireless service provider for assignment of the MDN by the wireless service provider,” (column 3 lines 39-41).

The HLR selects the VLR before contacting the VLR which functions as the current "service provider" of the mobile terminal.

Consider **claim 8**, and **as applied to claim 7 above**, Howe further discloses that the VLR allocates a TLDN from a pool of numbers whose geographic base is the serving switch in communication with the mobile terminal. The TLDN is returned to the HLR that forwards it to the network server, reading on the claimed "assigning the MDN and transmitting the assigned MDN to an entity other than the wireless service provider for configuring the MCD for operation with the assigned MDN," (column 4 lines 30-35).

Consider **claim 9**, and **as applied to claim 7 above**, Howe further discloses that the serving switch sending a routing request to the VLR which the associates the TLDN with the data unit **51** connected to the mobile terminal and passes its mobile identification number (MIN) in response to the routing request from the HLR, reading on the claimed "transmitting a serial number of the MCD to the wireless service provider together with the designation of the selected wireless rate center," (column 4 lines 62-65).

Consider **claim 10**, and **as applied to claim 9 above**, Howe further discloses that in order to identify the mobile terminal, the server associates the identity of the mobile terminal with the MIN of the mobile data unit it is connected to. To establish a data connection between the land-based terminal and the mobile terminal, the server sends a location request to the HLR associated with the data unit, reading on the claimed "assigning the MDN and transmitting the

serial number, together with the assigned MDN, to an entity other than the wireless service provider for configuring the MCN for operation with the assigned MDN,” (column 4 lines 12-15 and 19-23).

Consider **claim 11**, Howe clearly shows and discloses a system for optimizing the routing of a call originated from a land-based terminal to a wireless mobile terminal, reading on the claimed “wireless mobile communication device,” utilizing the interaction between a server controlled Internet protocol network and the HLR of the mobile terminal. In response to a call request by the server, the HLR identifies the VLR in contact with the mobile terminal and obtains a TLDN of the local serving switch in contact with a mobile data unit connected to the mobile terminal. The server uses the TLDN to reach a data unit on the network, which is used to place a local call over the PSTN to the serving switch, reading on the claimed, “apparatus for assigning a mobile dialing number (MDN) to a wireless mobile communication device (MCD) for providing local call access to the MCD from a base address for the MCD,” (abstract), the apparatus comprising:

the HLR searching its the internal database to determine the VLR last in contact with the mobile terminal, reading on the claimed “means for selecting a wireless rate center encompassing the base address and having an MDN providing local call access to the MCD from the base address for the MCD,” (column 3 lines 37-39); and

the HLR sending a routing request to the VLR, and the VLR determining that a call is deliverable and allocating a TLDN from a pool of numbers whose

geographic base is the serving switch in communication with the mobile terminal, reading on the claimed "means for assigning the MDN providing local calling access to the MCD from the base address for the MCD, in the selected wireless rate center encompassing the base address, to the MCD," (column 4 lines 28-33).

Consider **claim 12**, and **as applied to claim 11 above**, Howe further discloses the HLR searches its internal database for the VLR in contact with the mobile terminal, which then identifies the switch in communication with the mobile terminal that will connect the incoming call to the data unit associated with the mobile terminal, reading on the claimed "database defining geographic boundaries of a plurality of wireless rate centers, and means for selecting the wireless rate center of claim 11 from the database," (column 3 lines 37-39, column 4 lines 29-33, 65-67). The VLR, reading on the claimed "wireless rate center," stored in the database determines the serving switch which is the geographic location of the mobile terminal.

Consider **claim 13**, and **as applied to claim 12 above**, Howe further discloses that the network server chooses an appropriate data unit from the pool that is local to the physical location of the mobile terminal, by using the NPA-NXX number format of the TLDN and comparing it with the phone number connection between the data unit and its connection to the PSTN/IXC, reading on the claimed "means for converting the base address to a geographic location and selecting the wireless rate center from those wireless rate centers in the

database having geographic boundaries encompassing the geographic location of the base address,” (column 4 lines 52-57).

Consider **claim 14**, and **as applied to claim 11 above**, Howe further discloses the HLR searches its internal database to determine the VLR last in contact with the mobile terminal, reading on the claimed “means for selecting the wireless rate center prior to contacting a wireless service provider,” (column 3 lines 37-39). The HLR contacts the VLR and asks for the identity of the serving switch last in contact with the mobile terminal, reading on the claimed “means for transmitting a designation of the selected wireless rate center to a wireless service provider for assignment of the MDN by the wireless service provider,” (column 3 lines 39-41). The HLR selects the VLR before contacting the VLR which functions as the current “service provider” of the mobile terminal.

Consider **claim 15**, and **as applied to claim 11 above**, Howe further discloses that the VLR allocates a TLDN from a pool of numbers whose geographic base is the serving switch in communication with the mobile terminal. The TLDN is returned to the HLR that forwards it to the network server, reading on the claimed “means for assigning the MDN and transmitting the assigned MDN to an entity other than the wireless service provider for configuring the MCD for operation with the assigned MDN,” (column 4 lines 30-35).

Consider **claim 16**, Howe clearly shows and discloses a system for optimizing the routing of a call originated from a land-based terminal to a wireless mobile terminal, which may be a notebook computer, reading on the claimed

"wireless mobile communication device," utilizing the interaction between a server controlled Internet protocol network and the HLR of the mobile terminal. In response to a call request by the server, the HLR identifies the visited location register VLR in contact with the mobile terminal and obtains a TLDN of the local serving switch in contact with a mobile data unit, which may be a modem, connected to the mobile terminal. The server uses the TLDN to reach a data unit on the network, which is used to place a local call over the PSTN to the serving switch, reading on the claimed, "computer readable medium storing a computer program for assigning a mobile dialing number (MDN) to a wireless mobile communication device (MCD) for providing local call access to the MCD from a base address for the MCD," (abstract, column 3 lines 27-28, column 4 lines 15-16), the computer program comprising:

searching the internal database of the HLR to determine the VLR last in contact with the mobile terminal, reading on the claimed "computer readable code for selecting a wireless rate center encompassing the base address and having an MDN providing local call access to the MCD from the base address for the MCD," (column 3 lines 37-39); and

sending a routing request from the HLR to the VLR, and the VLR determining that a call is deliverable and allocating a TLDN from a pool of numbers whose geographic base is the serving switch in communication with the mobile terminal, reading on the claimed "computer readable code for assigning the MDN providing local calling access to the MCD from the base address for the

MCD, in the selected wireless rate center encompassing the base address, to the MCD," (column 4 lines 28-33).

Consider **claim 17**, and **as applied to claim 16 above**, Howe further discloses the HLR searches its internal database for the VLR in contact with the mobile terminal, which then identifies the switch in communication with the mobile terminal that will connect the incoming call to the data unit associated with the mobile terminal, reading on the claimed "computer readable code comprising a database defining geographic boundaries of a plurality of wireless rate centers, and computer readable code for selecting the wireless rate center of claim 16 from the database," (column 3 lines 37-39, column 4 lines 29-33, 65-67). The VLR, reading on the claimed "wireless rate center," stored in the database determines the serving switch which is the geographic location of the mobile terminal.

Consider **claim 18**, and **as applied to claim 17 above**, Howe further discloses that the network server chooses an appropriate data unit from the pool that is local to the physical location of the mobile terminal, by using the NPA-NXX number format of the TLDN and comparing it with the phone number connection between the data unit and its connection to the PSTN/IXC, reading on the claimed "computer readable code for converting the base address to a geographic location and selecting the wireless rate center from those wireless rate centers in the database having geographic boundaries encompassing the geographic location of the base address," (column 4 lines 52-57).

Consider **claim 19**, and **as applied to claim 18 above**, Howe further discloses the HLR searches its internal database to determine the VLR last in contact with the mobile terminal, reading on the claimed "computer readable code for selecting the wireless rate center prior to contacting a wireless service provider," (column 3 lines 37-39). The HLR contacts the VLR and asks for the identity of the serving switch last in contact with the mobile terminal, reading on the claimed "computer readable code for transmitting a designation of the selected wireless rate center to a wireless service provider for assignment of the MDN by the wireless service provider," (column 3 lines 39-41). The HLR selects the VLR before contacting the VLR which functions as the current "service provider" of the mobile terminal.

Consider **claim 20**, and **as applied to claim 19 above**, Howe further discloses that the VLR allocates a TLDN from a pool of numbers whose geographic base is the serving switch in communication with the mobile terminal. The TLDN is returned to the HLR that forwards it to the network server, reading on the claimed "computer readable code for assigning the MDN and transmitting the assigned MDN to an entity other than the wireless service provider for configuring the MCD for operation with the assigned MDN," (column 4 lines 30-35).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Howe (U.S. Patent # 6,615,381 B1)** in view of **Gallant et al. (U.S. Patent # 5,802,468)**.

Consider **claim 6**, and **as applied to claim 5**, Howe clearly shows and discloses the claimed invention except that the geographic locations of the data units, HLR, VLR or mobile terminal are not disclosed in terms of latitude and longitude.

In the same field of endeavor, Gallant et al. clearly show and disclose a method for providing different levels of mobile communication service within a communication system service area. A first level of service is provided to a mobile station when it is inside the home calling area, reading on the claimed "local call access." A plurality of base transceiver stations (BTSS), each having a cellular service area for communication with a mobile station, are coupled to a common database that has a memory for storing data related to a home geographical location associated with a mobile station, reading on the claimed "MCD," (abstract). A home calling area is a geographical region that can be described in units of distance around a subscriber's home geographical location, reading on the claimed "geographic location of a base address." A local calling area covers an area larger than a home calling area which could be a predetermined geographic area having city or county lines as boundaries, reading on the claimed "geographic boundaries of the wireless rate centers," (column 7 lines 14-25). Each BTS sends out a broadcast message that includes grid coordinate information such as identifier fields defining the geographical location of the BTS, for example, the latitude and longitude location of the BTS, reading on the claimed "defining the geographic boundaries of the wireless rate

centers, and the geographic location of the base address in terms of latitude and longitude," (column 10 lines 12-15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the latitude and longitude coordinates as taught by Gallant et al. in the system of Howe, in order to locate the switches and VLRs to make a local call from a land-based terminal to a wireless mobile terminal.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime M. Holliday whose telephone number is (571) 272-8618. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2686

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jaime Holliday

Patent Examiner


NICK CORSARO
PRIMARY EXAMINER